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## PATENT ABSTRACTS OF JAPAN

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## (54) STEPWISE SHOCK ABSORBING MATERIAL

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To form a firm and fragile and lightweight shock absorbing material by forming a shock absorbing material with its material and thickness varied for providing a fragile portion and firm portion on one cross-section.

**SOLUTION:** A shock absorbing material is formed that a face being close to the shock direction S, i.e., receiving shocks at first are made of a relatively fragile, i.e., deformable material 1, and a face being remote from the shock direction S is made of a firm material 2. The shock absorbing material is formed into a hollow structure provided with a hollow portion 3. Then, the shock absorbing material is set within the interior portion or exterior portion of an object to be shocked by welding, bolt tightening, or the like. By taking a directional property into consideration at this time, it is set in order that the firm portion of the shock absorbing material leads to be a face for finally receiving shocks. Accordingly, in the case of receiving shocks, the portion of the deformable material 1 is broken at first, and the face being vertical in the shock exerting direction tends to absorb only shocks that can not be absorbed at the deformable material 1.



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